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IMPACT - Improving Medicines and Polypharmacy Appropriateness Clinical Tool

This bulletin provides suggestions for consideration by commissioning organisations and clinicians to optimise medicines use, and provide practical advice (where it is available) about how to safely stop/discontinue/withdraw a medicine and issues to consider. For person-centred care, clinicians should ask people what matters to them so that their treatment and care can be personalised. A discussion about medicines benefits and risks and possible consequences of different options should take place with the person to enable shared decisions with them about whether to continue or stop a medicine. If it is decided that therapy is appropriate, it should be continued. Where it is decided to stop a medicine because the risk of continuing outweighs the benefit to the patient, the information in this bulletin can be used as a practical decision aid, in conjunction with other relevant, patient specific data.

Background

The World Health Organisation (WHO) aimed to reduce severe avoidable medication related harm by 50% globally by 2022. [WHO 2017] PrescQIPP have developed resources to support the WHO Medication without harm challenge, which are available here: https://www.prescqipp.info/our-resources/bulletins/bulletin-252-medicines-without-harm/

In September 2021 the national overprescribing review for England (Good for you, good for us, good for everybody) stated that 'Prescribing can be seen as a form of problem-solving, with a medical condition as the problem and a medicine as the solution. But more often than not medicines can only manage a condition, not cure it, and the wider needs and preferences of the patient may change. The key to stopping overprescribing is medicines optimisation: ensuring that patients are prescribed the right medicines, at the right time, in the right doses. In some cases, medicines optimisation may lead to a patient being offered additional medication, or having their dose increased, but it also provides a framework for reducing and stopping overprescribing. Stopping a medication may be just as challenging in terms of weighing the benefits or providing support as starting it. Deprescribing seeks to apply best practice in prescribing to the process of stopping a medicine. It needs the same skill and experience from prescribers, and the same level of support from pharmacists, and from guidance, data and insight, even from the pharmaceutical manufacturers, to get the best results. And just as with prescribing, it should place patients at the centre of the process, to ensure medicines optimisation.' [DHSC 2021]

The NHS in England and Wales spent £9.794 billion on medicines in primary care in 2019/2020. [NHS Digital 2020, Welsh Government 2020] The NHS in Scotland spent £1.0626 billion on medicines in primary care in 2019/2020. [Public Health Scotland 2021]. It is estimated that medicines worth over £300 million are wasted each year in England. The cost to the NHS of people not taking their medicines properly and not getting the full benefits to their health has been estimated at over £500 million a year. [NHSE 2015, YHEC 2010]

When talking with people about their medicines, health-care professionals should ask the person what matters to them and work together with them to reach a decision about care. Health care professionals should review whether the medicines are still clinically appropriate and be able to discuss the risks, benefits and possible consequences of different options. Since July 2019, clinical pharmacists working in Primary Care Networks are responsible for undertaking adherence-centred medication reviews in

people with complex polypharmacy. This applies especially to the elderly, people in care homes, those with multiple comorbidities (in particular frailty, COPD and asthma) and people with learning disabilities or autism (through STOMP – Stop Over Medication Programme). [NHSE 2016, NHSE 2022, NHSE 2021, NICE NG197]

The National Institute for Health and Care Excellence (NICE) clinical guideline on medicines optimisation (MO) and Kings Fund report about MO highlight that polypharmacy may be either appropriate or problematic/inappropriate. Problematic/inappropriate polypharmacy should be reviewed to optimise medicines use. [Duerden 2013, NICE NG5]

There are many examples of tools to support reviewing medicines and safely tapering or withdrawing ones which are no longer appropriate: PrescQIPP Polypharmacy & Deprescribing webkit, NO TEARS, STOPP-START, Beers criteria 2019, Scotland Polypharmacy Guidance 2018, Australian 10-step discontinuation guide, NHS Specialist Pharmacy Service patient centred approach to polypharmacy, Wales Polypharmacy in older people guide for healthcare professionals and the Canadian MedStopper tool.

Some medicines may need to be stopped. This should be done in an evidence-based manner. [WHO 2017, NICE NG5, Scott 2013]

Medicines may be considered for stopping if:

- There is no valid or relevant indication for prescribing as assessed by changes in symptoms, signs, laboratory and diagnostic test results. [Scott 2013, Garfinkel 2010]
- The known possible adverse drug reactions outweigh the possible benefits. [Scott 2013, Garfinkel 2010] It is important to note that adverse drug reactions and risks of medicines can change over time as patients become older and more frail.
- There is a risk of cumulative toxicity if particular medicines are taken together. [Scott 2013]
- The patient is choosing to not take/use the medication as prescribed or intended. [Scott 2013]
- Unlicensed medicines ('specials') are being prescribed when an alternative licensed medicine or formulation that is suitable for the individual will provide the same therapeutic benefit. [RPS 2015]
- Non-drug measures can provide benefit, without adverse effects. [Scott 2013]
- The patient is nearing end of life. [Scotland Polypharmacy Guidance 2018]

A whole systems, person-centred approach to safe deprescribing interventions is required, involving healthcare professionals, patients, and carers. Good communication is essential for successful withdrawal of therapy that is no longer appropriate. Consider health literacy issues to ensure the patient understands what is being discussed, e.g. use different formats or resources to aid the explanation. Record discussions in patient notes including their comments. [Drugs Ther Perspec 2014, Doherty 2020]

Notes for the IMPACT table

- In the IMPACT table, the lists of example medicines are not exhaustive.
- Links to PrescQIPP resources are included where relevant. In order to access the PrescQIPP resources you will need to be **logged in to the website** before clicking links in the document.
- **Clinical risk** classifies the risks versus the benefits of continuing therapy based on usual maintenance doses as a general indication for classes of medicines. The clinical risk is not absolute and is intended as a guide. Risks may differ for individual patients depending on various factors, e.g. age, co-morbidities etc.
- **Deprescribing priority** is to help in situations where, for example a patient is on 20 drugs and ten could be changed. It may not be possible (or desired by the clinician/patient) to stop these all at once, so criteria are needed to help decide which to do first. The priority has been assigned based on clinical risk and medicine/patient safety factors first, and only considers cost when all safety

issues are equal. Consider stopping one medicine at a time, if more than one is stopped and there are unwanted effects, it may be unclear which medicine is responsible.

- When reviewing treatment for individual patients, it is important to consider the cumulative risks of medicines taken together and adjust the clinical risk and deprescribing priority accordingly using clinical judgement.
- A separate data pack is available to show current spend on medicines and also contains a tool where you can input an individual patient's medicines to pull off a patient specific deprescribing prioritisation report: https://www.prescqipp.info/our-resources/bulletins/bulletin-268-impact/

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antispasmodics (e.g. atropine, dicycloverine (dicyclomine), propantheline, hyoscine butylbromide)	How long have they been prescribed? Avoid long term use, they are highly anticholinergic preparations, uncertain effectiveness. [Scotland Polypharmacy Guidance 2018, Beers criteria 2019] Medicines with anticholinergic activity may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021] Are likely to cause constipation, and non-constipating alternatives are available, for example alverine, mebeverine. [STOPP-START]	Withdraw slowly to avoid adverse effects from sudden discontinuation. [Scott 2013] PrescQIPP Anticholinergic burden bulletin and briefing, searches Offer lifestyle/self management advice [CKS irritable bowel syndrome]	M	M

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Gastrointestinal (GI) system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
H2 blockers/PPIs (e.g. cimetidine, famotidine, nizatidine/ esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole)	How long have they been prescribed at full (high) dose? [STOPP-START] Risk of bone loss and fractures with PPI use >1 year at high dose, particularly in the elderly. [Scotland Polypharmacy Guidance 2018, Beers criteria 2019] Is an NSAID still being taken? If no, stop H2 blocker/PPI [Medstopper] but consider other risk factors for GI bleeding including age >65 yrs; taking certain medicines, e.g. an antiplatelet, warfarin, DOAC, corticosteroid, SSRI etc.; history of peptic ulcer disease or GI bleeding. If not used for gastroprotection, stop PPI if there has been no proven peptic ulcer, GI bleeding or dyspepsia for one year, continued use may contribute to Clostridium difficile infection. [Beers criteria 2019, NICE NG199] If PPI use is appropriate, prescribe as generic omeprazole or lansoprazole capsules at the lowest dose needed. PPIs should be reviewed 4 to 8 weeks after starting treatment and discontinued where appropriate. For long term treatment, a medicine review of PPI therapy should be completed annually. Measurement of serum-magnesium concentrations should be considered before and during prolonged treatment with a proton pump inhibitor, especially when used with other drugs that cause hypomagnesaemia or with digoxin.[BNF} Limited benefit in people with limited life expectancy unless there is a recent history of gastrointestinal bleeding, peptic ulcer, gastritis, GORD, or the concomitant use of NSAIDs and steroids. [Thompson 2019] Cimetidine has some anticholinergic activity (PPIs have none), use lowest dose to control symptoms. [Scotland Polypharmacy Guidance 2018]	Offer lifestyle/self-management advice. [CKS Dyspepsia] Reduce the frequency and dose. Stop the PPI and advise use on demand or as self care (purchase OTC). PPIs can be stopped without tapering if needed. If rebound hypersecretion is a concern, then the dose of PPI can be reduced gradually. If used daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper] PrescQIPP PPI deprescribing algorithm	H2 blockers: M PPI: H	H2 blockers: M PPI: H

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Gastrointestinal (GI) system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Infantile colic products (e.g. Colief®, gripe water, simethicone)	Colief® is not considered as a medicinal product suitable for prescribing on the NHS unless the criteria set out by the Advisory Committee on Borderline Substances (ACBS) are met. Infacol® is denoted in the BNF as being less suitable for prescribing on the NHS. Evidence does not support use. Gripe water is not licensed for the treatment of infantile colic and should not be used. [NHSE/NHSCC 2018]	No tapering required. Advise to purchase OTC if still required. Provide parents/carers with advice to manage infantile colic. [CKS Colic - infantile] PrescQIPP Management of infantile colic	L	L
Laxatives (e.g. bisacodyl, docusate, ispaghula, lactulose, macrogols, methylcellulose, senna, sodium picosulfate)	Is hypokalaemia an issue? May be a sign of laxative abuse. [BNF] Has previous use of opioid analgesics reduced or stopped? [CKS constipation] Do regular bowel movements occur without difficulty? Is the patient eating and drinking and has an adequate fluid intake? [CKS constipation] What type of stool is passed? Use the Bristol stool chart. Check if the patient is taking an antipsychotic (e.g. clozapine, amisulpride, quetiapine) as they can cause constipation and prophylactic laxatives needed. [BNF, CKS constipation] See PrescQIPP Constipation resources	If >1 laxatives are used, reduce and stop one at a time slowly. Do not stop abruptly. Withdrawal may take a few months. Reduce stimulant laxative first, increase the dose of other laxatives if necessary. Restart laxatives if relapse occurs. Use stool frequency and consistency as a guide. Advise patient to have adequate fluid and fibre intake to stop constipation occurring. Offer self-management advice about diet, exercise and toileting. [CKS constipation]	M	M
Loperamide	Loperamide has some anticholinergic activity. Check if loperamide is being taken with other medicines that have anticholinergic activity and increase the anticholinergic burden. [Scotland Polypharmacy Guidance 2018]	If used daily for more than 3-4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Aldosterone antagonists/ mineralocorticoid receptor antagonists (MRAs) (e.g. spironolactone, eplerenone)	There is a risk of hyperkalaemia with MRAs if: • Spironolactone dose >25mg/day • Creatinine clearance <30ml/min • Concomitantly taking an NSAID, ACE inhibitor, angiotensin II receptor blocker, aliskiren, amiloride, triamterene or potassium supplement. [STOPP-START, Scotland Polypharmacy Guidance 2018, Beers criteria 2019] Consider stopping the NSAID to reduce risk and advise on alternative anti-inflammatory treatment. Advise not to purchase NSAID OTC. Measure serum sodium and potassium, and assess renal function, before and after starting an MRA and after each dose increment. Once the target, or maximum tolerated, dose of an MRA is reached, monitor treatment monthly for 3 months and then at least every 6 months, and at any time the person becomes acutely unwell. [NICE NG106] If potassium >5.5mmol/l review medicines, if potassium >6mmol/l and acutely unwell or >6.5mmol/l, stop spironolactone. [Renal Association hyperkalaemia management in the community] If used as a step 4 treatment for resistant hypertension, check adherence with other antihypertensives. [NICE NG136] See entry for **antihypertensives.**	If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen (e.g. chest pain, pounding heart, increased increased heart rate, increased blood pressure (re-measure for up to 6 months), anxiety, tremor), stop the MRA. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper] Give advice about salt consumption, maintaining fluid balance, smoking cessation, alcohol consumption, physical activity, nutritional status. [CKS Heart failure]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antianginals (e.g. ivabradine, nicorandil, ranolazine)	Not first line treatments. Do the known possible adverse drug reactions outweigh the possible benefits, e.g. visual disturbance, MI, severe bradycardia, arrhythmia (ivabradine), severe mouth ulceration (nicorandil), GI and neuropsychiatric disorders, palpitations, peripheral oedema, bradycardia, hypotension, QT prolongation, (ranolazine). [Prescrire 2018] Reduce antianginal treatment if mobility decreases. [Scotland Polypharmacy Guidance 2018]	No tapering required. Discuss withdrawal with specialist. Management of stable angina includes lifestyle advice about stopping smoking, a cardioprotective diet, healthy bodyweight, physical activity and alcohol consumption. [CKS Angina]	M	M
Antiarrhythmics (e.g. amiodarone, dronedarone)	Not first line treatments. [NICE CG180] Rate control has better balance of benefits and harms than rhythm control for most older adults in AF. Associated with multiple toxicities (thyroid, pulmonary, QT prolongation). Check all monitoring is being done. [STOPP-START, Scotland Polypharmacy Guidance 2018, Beers criteria 2019, Prescrire 2018, NHSE/NHSCC 2019] Antiarrhythmics may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021]	Discuss tapering/withdrawal with specialist.	M	H

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Cardiovascular system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Anticoagulants – oral and injected (e.g. warfarin, apixaban, dabigatran, edoxaban, rivaroxaban, heparin, dalteparin, enoxaparin, tinzaparin)	Do the known possible adverse drug reactions outweigh the possible benefits, e.g. bleeding? [STOPP-START, Beers criteria 2019, Pirmohamed 2004] Are LMWHs/oral anticoagulants prescribed following hip/knee replacement surgery still required? [BNF] Is there a concurrent significant bleeding risk? [STOPP-START] No proven added benefit of warfarin use >6 months for first DVT or >12 months for first PE unless there are continuing, provoking risk factors. [STOPP-START] Long term treatment after completion of 3 months warfarin is not routinely recommended when the VTE was provoked by surgery, non-surgical trigger factors, such as plaster cast, pregnancy or combined pill (COC) or the VTE occurred in the calf only. Unprovoked VTE events, have a higher risk of recurrence and longer treatment may be warranted. [Keeling 2011] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] If patient cannot take warfarin for cognitive reasons, DOACs may not be indicated either. [Scotland Polypharmacy Guidance 2018] Do not use with aspirin for chronic AF as there is no benefit from adding in aspirin. [STOPP-START] No added benefit from dual therapy with antiplatelets for stable coronary, cerebrovascular or peripheral arterial disease. [STOPP-START] Do not use with NSAIDs as risk of major GI bleeding. [STOPP-START] Do not stop anticoagulants on the basis of falls risk. [NICE CG180] Check BNF and individual SPCs for interactions with concomitant medicines – are any of them enzyme inducers or inhibitors? [BNF] See https://www.medicines.org.uk/emc/ If there are interacting drugs, review patient need for them and monitor for changes in anticoagulation, particularly if the dose of the interacting medicines are changed or stopped. See PrescQIPP Anticoagulation resources	Warfarin - no tapering required. [CKS anticoagulation oral] DOACs – no tapering required. LMWH - no tapering required.	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antihypertensives See individual drug classes for further information.	Is the BP at a normal level or too low? Check if the medicine is being used for cardiovascular risk reduction or high blood pressure. Do the known possible adverse drug reactions outweigh the possible benefits, e.g. orthostatic hypotension, CNS effects, risk of falls? [Beers criteria 2019, Pirmohamed 2004] Would leg elevation/compression hosiery be more appropriate? [STOPP-START] Is lifestyle advice being followed? [NICE NG136] ACE inhibitors, angiotensin II receptor blockers, calcium channel blockers and central alpha blockers not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] In people >80 yrs with blood pressure >150/90 mmHg, NICE NG136 says offer lifestyle advice and consider drug treatment, so deprescribing appropriate in this age group. [NICE NG136] ACE inhibitors, angiotensin II receptor blockers, beta blockers, calcium channel blockers and thiazide diuretics have limited benefit for mild to moderate hypertension, secondary prevention of cardiovascular events and management of stable coronary artery disease in people with a limited life expectancy. [Thompson 2019] Antihypertensives (particularly alpha blockers, centrally acting antihypertensives and diuretics) may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls]	If >1 antihypertensives are used, stop one at a time, maintaining the dose of the others without change. [Garfinkel 2010] Check adherence. Consider the difference in treatment options for people from black African/African-Caribbean family origin when considering which drug to stop first. Restart antihypertensives if BP increases above 150/95 mmHg if there is no organ damage.[NICE NG136] Withdraw alpha blockers gradually to avoid severe rebound hypertension. ACE inhibitors, beta blockers and diuretics are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal. [Scott 2013] **See more information below**		

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antihypertensives ctd See individual drug classes for further information.	See above	If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen (chest pain, pounding heart, increased increased heart rate, increased blood pressure (re-measure for up to 6 months), anxiety, tremor), stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper] PrescQIPP antihypertensive deprescribing algorithm Offer lifestyle advice and continue to offer it periodically. Focus on diet and exercise, caffeine intake, dietary sodium, smoking and alcohol consumption. [CKS Hypertension]		

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
ACE inhibitors (ACEI, e.g. captopril, enalapril, lisinopril, perindopril, ramipril)	Consider changing treatment if hyperkalaemia present. [STOPP-START] There is no benefit of perindopril arginine over generic perindopril erbumine. [NHSE/NHSCC 2019]	See information on pages 11 and 12	M	M
Alpha 1 blockers (e.g. prazosin, doxazosin, terazosin)	High risk of orthostatic hypotension, not recommended as routine treatment. Other antihypertensives have better risk-benefit profile. [Beers criteria 2019] There is no good evidence of benefit with doxazosin MR over immediate release doxazosin. [NHSE/NHSCC 2019]		M	H
Central alpha blockers (e.g. clonidine, methyldopa, moxonidine, reserpine)	Not routinely recommended, use only if other antihypertensives not tolerated or not effective. High risk of adverse CNS effects may cause bradycardia and orthostatic hypotension. [STOPP-START, Beers criteria 2019]		H	H
Angiotensin II receptor blockers (ARB) (e.g. candesartan, losartan, valsartan)	Consider changing treatment if hyperkalaemia present. [STOPP-START]		M	H
Beta blockers (e.g. atenolol, bisoprolol, celiprolol, metoprolol, nebivolol, propranolol)	Risk of heart block with concomitant use of verapamil/diltiazem. [STOPP-START] In patients with bradycardia (<50/min), type II heart block or complete heart block, there is a risk of complete heart block/asystole if a beta blocker is taken.[STOPP-START] Potential risk of toxicity in overdose with propranolol. [HSIB 2020]		M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Calcium channel blockers (e.g. amlodipine, diltiazem, felodipine, nifedipine, verapamil)	Verapamil/diltiazem may worsen heart failure. [STOPP-START] Avoid use of immediate release nifedipine due to risk of hypotension and precipitating myocardial ischaemia. [Beers criteria 2019]	See information on pages 11 and 12	M	H
Diuretics (e.g. amiloride, bendroflumethiazide, bumetanide, chlortalidone, furosemide, indapamide)	Do the known possible adverse drug reactions outweigh the possible benefits? Regular monitoring of U&Es required. [Scotland Polypharmacy Guidance 2018] Loop diuretic - Do not use as first line treatment, may exacerbate incontinence, do not use for ankle oedema without clinical, biochemical or radiological evidence of heart failure, liver failure, nephrotic syndrome or renal failure. [STOPP-START] Thiazide diuretics can precipitate hypokalaemia, hypocalcaemia, hyponatraemia and gout, avoid use if these are present. [STOPP-START, Pirmohamed 2004]		M	H
Renin inhibitor (e.g. aliskiren)	Insufficient evidence of effectiveness of aliskiren to recommend use. [NHSE/NHSCC 2019, Prescrire 2018]		H	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antiplatelets (e.g. clopidogrel, prasugrel, ticlopidine)	Not indicated for primary prevention of CHD. [Scotland Polypharmacy Guidance 2018] e.g. Is dual/triple therapy still required for CV risk reduction? Aspirin + clopidogrel only given for 12 months post ACS. [Scotland Polypharmacy Guidance 2018] Clopidogrel and prasugrel have similar efficacy, stronger evidence and fewer side effects than dipyridamole. [STOPP-START, Beers criteria 2019, NICE TA210] No added benefit from dual therapy with anticoagulants for stable coronary, cerebrovascular or peripheral arterial disease. [STOPP-START] Do the known possible adverse drug reactions outweigh the possible benefits e.g. GI bleeding? [STOPP-START, Scotland Polypharmacy Guidance 2018, Pirmohamed 2004] Avoid concurrent use of anticoagulants and NSAIDs. [STOPP-START, Scotland Polypharmacy Guidance 2018] Use PPI (e.g. lansoprazole or pantoprazole) with clopidogrel if GI risk factors present. [STOPP-START, Scotland Polypharmacy Guidance 2018] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia]	No tapering required. Record stopping date for short term treatment and stop treatment when course complete. Offer advice on lifestyle changes that can reduce the risk of having further MI or other cardiovascular events following an MI, e.g. smoking cessation, healthy diet, physical activity, healthy body weight, alcohol consumption. [CKS MI - secondary prevention]	H	H

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Cardiovascular system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Aspirin – low dose	Re-evaluate the patient's risk profile for primary prevention. [STOPP-START] Limited benefit in people with limited life expectancy. [Thompson 2019] Do not use aspirin monotherapy solely for stroke prevention in people with atrial fibrillation. [NICE CG180] Do not offer aspirin for the primary prevention of cardiovascular disease to adults with type 1 diabetes. [NICE NG17] Do not offer antiplatelet therapy (aspirin or clopidogrel) for adults with type 2 diabetes without cardiovascular disease. [NICE NG28] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Do the known possible adverse drug reactions outweigh the possible benefits e.g. bleeding? [Garfinkel 2010, Pirmohamed 2004] Is a dose of >150mg/day being used for a cardiovascular indication? [STOPP-START] Do not use with anticoagulants for chronic AF as there is no added benefit from aspirin. [STOPP-START] Use concomitantly with clopidogrel for maximum of 12 months post ACS. [Scotland Polypharmacy Guidance 2018]	No tapering required. [Primary Health Tasmania deprescribing guide] Offer advice on lifestyle changes that can reduce the risk of having further MI or other cardiovascular events following an MI, e.g. smoking cessation, healthy diet, physical activity, healthy body weight, alcohol consumption. [CKS MI - secondary prevention]	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Digoxin	Do the known possible adverse drug reactions outweigh the possible benefits? E.g. if there is an increase in toxicity, or a decreased oral fluid intake. [STOPP-START, Garfinkel 2010, Pirmohamed 2004] Long term digoxin at >125microgram/day in patients with impaired renal function can lead to an increased risk of toxicity. [STOPP-START] BNF advises to reduce dose in elderly patients. [BNF]	Digoxin is commonly associated with adverse effects if stopped suddenly. Slow weaning required. [Scott 2013] If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen (chest pain, pounding heart, increased heart rate, increased blood pressure (re-measure for up to 6 months), anxiety, tremor) stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	M	H
Fibrates (e.g. bezafibrate, ciprofibrate, fenofibrate, gemfibrozil)	Do the known possible adverse drug reactions (e.g. cutaneous, haematological and renal disorders) outweigh the possible benefits? Monitor renal function and creatine phosphokinase levels closely. [Prescrire 2018] Limited benefit in people with limited life expectancy. [Thompson 2019]	No tapering required. Discuss the benefit of lifestyle modifications and optimise management of all other modifiable CVD risk factors. Some people may need support to change their lifestyle, e.g. exercise referral schemes or smoking support services. [CKS CVD risk assessment & management]	M	M

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Cardiovascular system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Nitrates (e.g. isosorbide mononitrate, isosorbide dinitrate)	The patient has not had chest pain for 6 months. [Garfinkel 2010] The patient has reduced mobility. [Scotland Polypharmacy Guidance 2018] Is the patient on nitrate monotherapy and still symptomatic? Consider alternative treatment. Avoid concurrent use of PDE-5 inhibitor (e.g. sildenafil, tadalafil, vardenafil) due to risk of cardiovascular collapse. [STOPP-START]	Withdraw slowly to avoid adverse effects from sudden discontinuation. [Scott 2013] If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen (chest pain, pounding heart, increased heart rate, increased blood pressure (re-measure for up to 6 months), anxiety, tremor) stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper] Offer lifestyle advice - smoking cessation, cardioprotective diet, maintain healthy weight, increase physical activity and limit alcohol consumption. [CKS Angina]	M	M
Omega 3 fatty acid supplements	Not recommended by NICE for a variety of conditions – MI secondary prevention, sleep problems in autism, primary prevention of cardiovascular disease in type 2 diabetes, preventing hypertensive disorders in pregnancy or treating familial hypercholesterolaemia. [NHSE/NHSCC 2019]	No tapering required.	L	L
Icosapent ethyl	Icosapent ethyl is a stable ethyl ester of the omega-3 fatty acid, eicosapentaenoic acid (EPA). It is recommended as an option for reducing the risk of cardiovascular events in adults by NICE. [NICE TA805] Review/stop in patients with atrial fibrillation or flutter and caution with antithrombotic treatment (bleeding time increased). [BNF]	No tapering required.	L	L

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Other lipid lowering agents (e.g. colesevelam, colestipol, colestyramine, ezetimibe, bempedoic acid, bempedoic acid with ezetimibe, nicotinic acid, alirocumab, evolocumab, inclisiran, lomitapide, volanesorsen)	Check indication for use, adherence to therapy and lifestyle modifications optimised. Nicotinic acid and bile acid sequestrants not recommended by NICE for preventing CVD. [BNF] Limited benefit in people with limited life expectancy. [Thompson 2019]	No tapering required. Discuss withdrawal with specialist. Discuss the benefit of lifestyle modifications and optimise management of all other modifiable CVD risk factors. Some people may need support to change their lifestyle, e.g. exercise referral schemes or smoking support services. [CKS CVD risk assessment & management]	M	M
Peripheral vasodilators (e.g. cilostazol, moxisylyte, naftidrofuryl, pentoxifylline)	Clinical effectiveness not established. [Scotland Polypharmacy Guidance 2018, BNF] Do the known possible adverse drug reactions outweigh the possible benefits? [Garfinkel 2010] Rarely indicated for long term treatment. [Scotland Polypharmacy Guidance 2018] Only naftidrofuryl oxalate recommended as an option by NICE. [NICE TA223]	No tapering required.	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Statins (e.g. atorvastatin, fluvastatin, pravastatin, rosuvastatin, simvastatin)	Re-evaluate the patients risk profile for primary and secondary prevention of cardiovascular disease. [Petersen 2010] Consider need for and intensity of treatment with respect to life expectancy and adverse drug reaction (ADR) risk. [Scotland Polypharmacy Guidance 2018, Thompson 2019] Stop in metastatic disease [Kutner 2015, LeBlanc 2015, Todd 2013] or other contraindications as per the SPCs, e.g. liver disease. See https://www.medicines.org.uk/emc/ Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia]	No tapering required. PrescQIPP statin deprescribing algorithm Discuss the benefit of lifestyle modifications and optimise management of all other modifiable CVD risk factors. Some people may need support to change their lifestyle, e.g. exercise referral schemes or smoking support services. [CKS CVD risk assessment & management]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antihistamines (e.g. acrivastine, alimemazine, brompheniramine, cetirizine, chlorphenamine maleate, clemastine, cyproheptadine, desloratadine, diphenhydramine, fexofenadine, hydroxyzine, levocetirizine, loratadine, promethazine)	**First generation antihistamines** are highly anticholinergic, clearance is reduced with advanced age, greater risk of confusion, dry mouth, constipation, tolerance develops when used as a hypnotic. [Beers criteria 2019 PrescQIPP Anticholinergic burden bulletin, briefing, searches] Antihistamines may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). First generation antihistamines are more fall risk increasing than second generation antihistamines. The risk difference is related to variation in sedative effects and anticholinergic activity. [Lee 2021, Seppala 2021, PrescQIPP medication and falls]	First generation antihistamines No tapering required.	H	H
	Hay fever symptoms can be self-treated with locally acting products. **Non-sedating antihistamines** (e.g. cetirizine, loratadine, fexofenadine) are less anticholinergic than the first-generation more sedating antihistamines. [NHSE/NHSCC 2018, Scotland Polypharmacy Guidance 2018]	Non-sedating antihistamines No tapering required.	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antimuscarinics - inhaled (e.g. aclidinium, glycopyrronium, ipratropium, tiotropium, umeclidinium)	Antimuscarinic bronchodilators (e.g. ipratropium, tiotropium) may exacerbate glaucoma in people with a history of narrow angle glaucoma or may cause urinary retention if someone has bladder outflow obstruction. [STOPP-START] Check if the antimuscarinic bronchodilators are being taken with other medicines that have anticholinergic activity and increase the anticholinergic burden. [Scotland Polypharmacy Guidance 2018]	No tapering required.	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Corticosteroids – inhaled (e.g. beclometasone, fluticasone, budesonide, mometasone)	In asthma – review every 3 months, has control been achieved? Consider using a validated questionnaire (for example, the Asthma Control Questionnaire or Asthma Control Test) to monitor asthma control in adults (aged 17 and over). [NICE NG80] If yes, maintain patients on the lowest possible dose of inhaled corticosteroid. If no, consider whether the dose is correct, do benefits outweigh risks? [BNF] In COPD – if adding an inhaled corticosteroid to a long acting antimuscarinic bronchodilator (LAMA) and a long acting beta2 agonist (LABA) does not improve symptoms after 3 months, switch back to LAMA/LABA combination. [NICE NG115] If the risk of stopping or tapering a medicine is increased due to external factors (e.g. COVID) then delay the deprescribing until it is safe to do so. [NICE NG168]	Reduce dose slowly (by 25-50% every 3 months) if the adult is asymptomatic and they are involved with the decision. [BNF, BTS/SIGN 2019] Corticosteroids are commonly associated with adverse effects if discontinued suddenly and require slow reduction. [Scott 2013] If stepping down a combination product, a switch to an alternative product may be required. Note that while combination inhalers should be prescribed by brand, inhaled corticosteroids are not directly interchangeable. [BTS/SIGN 2019] If an adult is on high doses of an inhaled corticosteroid (>800 micrograms budesonide or equivalent), and/or on several asthma medicines, discuss withdrawal with a specialist. PrescQIPP asthma bulletin	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Corticosteroids – oral (e.g. betamethasone, dexamethasone, fludrocortisone, hydrocortisone, prednisolone)	For exacerbations in COPD give 30mg oral prednisolone for 5 days then stop. [NICE NG115] Oral prednisolone maintenance in COPD is not usually recommended. [NICE NG115, GOLD 2020] Prescribe oral steroids at the lowest possible dose for the shortest duration. [Beers criteria 2019] Some people with advanced COPD may need long-term oral corticosteroids when these cannot be withdrawn following an exacerbation. In these cases, the dose of oral corticosteroids should be kept as low as possible. [NICE NG115] Avoid in older adults with or at high risk of delirium because of potential of inducing or worsening delirium. [Beers criteria 2019] There is an increased risk of peptic ulcer or GI bleed when prescribed with an NSAID - avoid. [Beers criteria 2019] Supply steroid card(s) and counselling where needed. Steroid treatment cards should be issued where appropriate to support communication of the risks associated with treatment and to record details of the prescriber, drug, dosage, and duration of treatment. Steroid emergency cards should be issued to patients with adrenal insufficiency and steroid dependence for whom missed doses, illness, or surgery puts them at risk of adrenal crisis.[BNF, PrescQIPP Steroid emergency card hot topic bulletin]	The magnitude and speed of dose reduction and withdrawal should be determined on a case by case basis. Gradual withdrawal should be considered for those who have received more than 3 weeks treatment in the last 12 months, and/or 40mg prednisolone daily (or equivalent) or have other possible causes of adrenal suppression. [STOPP-START, Scott 2013, BNF, AWMSG Polypharmacy in older people]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Cough and cold remedies (e.g. dextromethorphan or codeine (cough suppressants); guaifenesin or ipecacuanha (expectorants); phenylephrine hydrochloride, pseudoephedrine hydrochloride, ephedrine hydrochloride, oxymetazoline, or xylometazoline hydrochloride (decongestants))	These are treatments with limited clinical value/evidence. Advise patients who wish to try cough mixtures, decongestants, inhalations or lozenges, to purchase OTC. [NHSE/NHSCC 2018, PrescQIPP Self care - over the counter items bulletin] Expectorants not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia]	No tapering required.	L	L
Theophylline	Monotherapy in COPD is not appropriate – safer, more effective alternatives are available. [STOPP-START] Has some anticholinergic activity. Check if theophylline is being taken with other medicines that have anticholinergic activity and increase the anticholinergic burden? [Scotland Polypharmacy Guidance 2018]	No tapering required.	H	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Analgesics – non opioid (e.g. paracetamol, aspirin, low dose ibuprofen, nefopam)	Purchase short courses of analgesics (e.g. paracetamol, ibuprofen) OTC. [NHSE/NHSCC 2018] Patients may also purchase up to 100 paracetamol tablets/month OTC at the discretion of a community pharmacist. Don't switch patients to co-codamol because the advantages with low dose opioid content (e.g. 8mg) have not been substantiated and may not provide significant additional relief of pain. Opioid side effects (e.g. constipation) are also possible.[BNF] Nefopam can cause antimuscarinic side effects, use with caution in the elderly. [BNF] Review the prescribing of paracetamol for chronic primary pain as part of shared decision making: • Explain the lack of evidence for use in chronic primary pain and • Agree a shared plan for continuing safely if there is benefit at a safe dose and few harms or • Explain the risks of continuing if there is little benefit or significant harm, and encourage and support person to reduce and stop the medicine if possible. Local anaesthetics (topical or intravenous) may be continued if being used as part of a clinical trial for complex regional pain syndrome. Encourage non-pharmacological management of chronic primary pain. [NICE NG193]	No tapering required, possible withdrawal headache. Consider non-drug options and self-management strategies as alternative treatments, e.g. physical activity, supervised group exercise programmes, acceptance and commitment therapy (ACT), cognitive behavioural therapy (CBT), acupuncture or dry needling. [NICE NG193]	L	H

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Analgesics – opioid (e.g. morphine, codeine, oxycodone, tramadol, dihydrocodeine, pethidine, fentanyl, buprenorphine, tapentadol, meptazinol, methadone)	Is a monthly prescription for an opioid still indicated for pain relief? Has the underlying painful condition resolved/been treated? [Opioids Aware, NICE NG193] Patients who do not achieve useful pain relief from opioids within 2 to 4 weeks are unlikely to gain benefit in the long term. [Opioids Aware] Opioid dose escalating without adequate response, harms outweigh benefits if over 120mg oral morphine equivalent/24 hours is taken. [Opioids Aware] Does the patient have intolerable side effects? The risk of constipation and falls can outweigh the benefits particularly with weak opioids. [BNF, Opioids Aware] Opiates have some anticholinergic activity. [Scotland Polypharmacy Guidance 2018] Co-codamol and co-dydramol are considered less suitable for prescribing. [BNF] Review laxative use when opioid stopped. [Scott et al 2013, PrescQIPP constipation bulletin] Fentanyl patches: life-threatening and fatal opioid toxicity from accidental exposure, particularly in children. [DSU 2018]	Discuss benefits of withdrawing an opioid with the person, allow enough time to explore the person's circumstances and preferences, acknowledge concerns about withdrawal, reassure and signpost to support groups. [NICE NG215] Opioids are commonly associated with withdrawal symptoms if discontinued suddenly, slow weaning required. [Scott 2013, Opioids Aware] The dose of opioid can be tapered by 10% weekly or every two weeks. [Opioids Aware] Individualise tapering - slow rate of taper or pause if withdrawal symptoms are significant for the patient. [NICE NG215]	H	H

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Analgesics – opioid ctd (e.g. morphine, codeine, oxycodone, tramadol, dihydrocodeine, pethidine, fentanyl, buprenorphine, tapentadol, meptazinol, methadone)	PrescQIPP Bulletin: Fentanyl immediate release formulations: potential safety problems due to high doses of a potent opioid and complicated titration/ maintenance instructions. [NHSE/NHSCC 2019] Stop oxycodone/naloxone combination - not cost effective. [NHSE/NHSCC 2019] Stop co-proxamol - withdrawn in 2005 for safety concerns. [NHSE/NHSCC 2019] Stop tramadol/paracetamol combination - not more effective than established analgesics. [NHSE/NHSCC 2019] Is there strong evidence that the patient is diverting their medication(s) to others? [Opioids Aware] Is the patient over ordering or collecting? Check the number of collections over the last 6 months. If needed, add a minimum number of days between issuing prescriptions. Check for interactions/contraindications to use due to concomitant centrally acting drugs and medical and mental health co-morbidities. [Opioids Aware, CKS Analgesia] Opioids co-prescribed with a gabapentinoid or benzodiazepine causes potentially fatal respiratory depression. [BNF, DSU 2020] Opioid analgesics may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls]	Consider paracetamol with PRN opioid as an alternative to combination products. Consider non-drug options and self-management strategies as alternative treatments, e.g. physical activity, supervised group exercise programmes, acceptance and commitment therapy (ACT), cognitive behavioural therapy (CBT), acupuncture or dry needling. [Opioids Aware] Reduce and stop medications for opioid ADRs as the opioid is tapered, e.g. laxatives. Reduce and synchronise quantities of medicines so the person has the correct amount for the withdrawal programme. PrescQIPP opioid deprescribing algorithm		

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antidepressants (e.g. selective serotonin reuptake inhibitors (SSRIs), tricyclic antidepressants (TCAs), others: MAOIs, agomelatine, duloxetine, reboxetine, venlafaxine, mirtazapine)	For a single episode of depression treat for 6 to 9 months; for multiple episodes, treat for at least 2 years, no upper duration of treatment has been identified. [Maudsley Prescribing Guidelines 2018] Dosulepin should not be prescribed. [NHSE/NHSCC 2019, BNF] Does the patient have advanced/end stage dementia? [Parsons 2015] Do the known possible adverse drug reactions outweigh the possible benefits? e.g. TCAs can worsen dementia, glaucoma, constipation, urinary retention; SSRIs may induce clinically significant hyponatraemia. [STOPP-START, Garfinkel 2010] TCAs are highly anticholinergic. SSRIs and mirtazapine have some anticholinergic activity. [Scotland Polypharmacy Guidance 2018] Are TCAs being taken with other medicines that have anticholinergic activity and can increase risk of cognitive impairment, e.g. chlorpromazine, oxybutynin, chlorphenamine? See PrescQIPP anticholinergic burden bulletin for further information. TCAs not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Antidepressants may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls]	Reduce dose gradually to avoid withdrawal effects. [NICE NG222, BNF] Aim to taper over months, not weeks. Take account of the pharmacokinetic profile and duration of treatment. Reduce by a fixed proportion of the previous dose, e.g. 50%. Use smaller reduction, e.g. 25% as dose gets smaller, use liquids if needed. Fluoxetine 20mg can be reduced by alternate day dosing; 40mg to 60mg should be withdrawn gradually. Evaluate effects after 1-2 weeks before reducing dose further. [NICE NG222] Antidepressants with short half lives (e.g. paroxetine, venlafaxine) may need to be tapered more slowly. [PrescQIPP antidepressants bulletin, Maudsley Prescribing Guidelines 2018] PrescQIPP antidepressant deprescribing algorithm Anticholinergic burden bulletin, briefing, searches Consider psychosocial and psychological interventions (e.g. guided self help, cognitive behavioural therapy (CBT), group based physical activity, counselling) depending on the severity of the depression. [CKS Depression]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Anti-epileptic drugs (e.g. brivaracetam, carbamazepine, clobazam, clonazepam, eslicarbazepine, ethosuximide, gabapentin, lacosamide, lamotrigine, levetiracetam, oxcarbazepine, perampanel, phenytoin, phenobarbital, pregabalin, primidone, rufinamide, sodium valproate, tiagabine, topiramate, vigabatrin, zonisamide)	Reduce dose of gabapentin and pregabalin if creatinine clearance <60ml/min. [Beers criteria 2019] Pregabalin - are adjustments in dose or dosing regimen needed for patients at higher risk of respiratory depression, e.g. those with compromised respiratory function; respiratory or neurological disease, or renal impairment taking other CNS depressants (including opioid-containing medicines); aged older than 65 years. [DSU 2021] Carbamazepine has some anticholinergic activity and gabapentin has minimal anticholinergic activity, consider anticholinergic burden if other anticholinergic medicines used. [Scotland Polypharmacy Guidance 2018] Older generation antiepileptics are more fall risk increasing than newer antiepileptics. The risk difference is related to the sedative effects. [Seppala 2021, PrescQIPP medication and falls] **Epilepsy** Check that medicines prescribed for epilepsy are prescribed as per the MHRA advice about those which must be supplied by brand and those which can be generic. [BNF] Ensure females of childbearing potential prescribed valproate medicines are supported on the Valproate Pregnancy Prevention Programme. [NICE CG137, CKS epilepsy, DSU 2018] **Non-epilepsy indications** Assess effectiveness/dose if used for for neuropathic or chronic primary pain management. Do adverse effects outweigh benefits?. [Scotland Polypharmacy Guidance 2018, NICE CG173, NICE NG193] Review sub-therapeutic doses of anti-epileptic drugs for non-epilepsy indications, if adverse effects outweigh benefits withdraw gradually and stop. Where sub-therapeutic doses of anti-epileptic drugs for non-epilepsy indications are used in care homes for people with learning difficulties, discuss gradually withdrawing and stopping with the prescriber. [NHSE 2016]	Discuss tapering/withdrawal for epilepsy and trigeminal neuralgia with specialist. [CKS epilepsy, CKS trigeminal neuralgia] If gabapentin or pregabalin are not effective or not tolerated for neuropathic pain or chronic primary pain, discontinue treatment gradually over a minimum of 1 week. [CKS neuropathic pain] Individualise reduction regimes with the patient. Length of withdrawal will vary dependent on the patient's response. Dose changes may occur weekly, fortnightly or monthly depending on an agreed reduction regime with the patient. At each dose change reduce the daily dose as follows - gabapentin by 300mg and pregabalin by 50mg. [AWMSG Polypharmacy in older people] Neuropathic pain bulletin, briefing and audit	H	H

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antipsychotics (e.g. chlorpromazine, levomepromazine, promazine, pericyazine, fluphenazine, perphenazine, prochlorperazine, trifluoperazine, benperidol, haloperidol, flupentixol, zuclopenthixol, pimozide, sulpiride, clozapine, aripiprazole, olanzapine, quetiapine, amisulpride, risperidone, lurasidone)	Do the known possible adverse drug reactions outweigh the possible benefits? [Garfinkel 2010] Fluphenazine, chlopromazine, clozapine, doxepin and levomepromazine are highly anticholinergic. Olanzapine, quetiapine, risperidone and haloperidol have some anticholinergic activity. Trifluoperazine and perphenazine have unknown anticholinergic activity. Check if antipsychotics are being taken with other medicines that have anticholinergic activity and increase risk of cognitive impairment, e.g. TCAs, oxybutynin, chlorphenamine? [Scotland Polypharmacy Guidance 2018, PrescQIPP anticholinergic burden] Are they being prescribed to control behavioural symptoms in dementia and learning disabilities? Often referred to as agitation or aggression. [NHSE 2016] Antipsychotic treatment is associated with increased mortality in elderly patients with dementia with and without co-morbidities.[Norgaard 2022] Antipsychotics may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls]	Discuss tapering/withdrawal with specialist. Withdrawal after long term therapy (1 to 2 years) must be gradual and individualised (start with 10-25% dose reduction) to reduce the risk of adverse events. Review weekly, then monthly, closely monitor for 2 years after drug withdrawal to avoid relapse. [Scotland Polypharmacy Guidance 2018, Scott 2013, BNF, Brandt 2022] In dementia patients with behavioural and psychological symptoms, review and discontinue if there has been no response and symptoms are mild, unless there is extreme risk or distress for the patient. [NHSE 2016, Alzheimer's Society 2017, Van Leeuwen 2018] Standardised symptom evaluations and drug cessation attempts should be undertaken at regular intervals. [Alzheimer's Society 2017, Van Leeuwen 2018] PrescQIPP antipsychotics in dementia deprescribing algorithm	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Barbiturates (e.g. amobarbital, butobarbital, phenobarbital, secobarbital)	Intermediate acting preparations should only be used in severe intractable insomnia, avoid use in the elderly. [BNF] The long-acting barbiturate phenobarbital is still sometimes of value in epilepsy but its use as a sedative is unjustified. [BNF] All sedatives have an anticholinergic burden, use cautiously. See PrescQIPP anticholinergic burden bulletin for further information. High rate of physical dependence, tolerance to sleep benefits, risk of overdose at low doses. [Beers criteria 2019] Barbiturates may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021]	If used daily for more than 3 to 4 weeks, reduce the dose by 25% every 3 to 4 days. Once at 25% of the original dose and no withdrawal symptoms (e.g. restlessness, insomnia, weakness, dizziness, nausea, sweating, anxiety, tremors, seizures, hallucinations, psychosis, hyperthermia, circulatory failure) have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	M	H

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Benzodiazepines and other hypnotics (including 'Z' drugs) (e.g. alprazolam, clomethiazole, chlordiazepoxide, clonazepam (see also anti – epileptic drugs), diazepam, flurazepam, lorazepam, melatonin, nitrazepam, oxazepam, temazepam, zopiclone, zaleplon, zolpidem)	Is use still required if physical and psychological health and personal circumstances are stable? If the patient is willing, committed and compliant, and has adequate social support, is withdrawal possible in primary care? [CKS benzodiazepines] With long term use, risk of adverse effects including falls, exceeds therapeutic benefit of continued use. [STOPP-START, Scott 2013, BNF, Fiss 2011] All sedatives have an anticholinergic burden, use cautiously. See PrescQIPP Anticholinergic burden bulletin for further information. Current or recent use of benzodiazepines has been associated with an increased risk of pneumonia. [Sun 2019] Nitrazepam and flurazepam have a prolonged action and may give rise to residual effects on the following day; repeated doses tend to be cumulative. [BNF] Lack of evidence for benzodiazepines to treat chronic primary pain. Do benefits outweigh risks if treatment continued? [NICE NG193] Benzodiazepines may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls] Deprescribe melatonin if prescribed for jet lag on the NHS or insomnia with Alzheimers disease. Review and deprescribe modified release melatonin in adults after 13 weeks treatment. Check that all suitable people have undergone a two-week drug holiday to assess need for ongoing treatment: 3 months after treatment started and 6 monthly thereafter. Stop if sleep improvements are maintained during the drug holiday. [PrescQIPP melatonin]	Withdrawal should be flexible. Rate of reduction must be tolerable for the patient. The rate depends on the initial dose of benzodiazepine, duration of use, and the patient's clinical response. [BNF, CKS benzodiazepines] Short-term users (2 to 4 weeks only) can usually taper off within 2 to 4 weeks. [BNF] For long term users, withdrawal should be gradual to avoid confusion, toxic psychosis and convulsions. [STOPP-START, BNF, CKS benzodiazepines] Switch to an approximately equivalent dose of diazepam. Stabilise on diazepam, then start with with 5–10% reduction every one to two weeks, or an eighth of the dose fortnightly (use a slower reduction at lower doses), titrate according to the severity of withdrawal symptoms. [CKS benzodiazepines] **Information continued on next page.**	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering advice	CR	DP
Benzodiazepines and other hypnotics (including 'Z' drugs) (e.g. alprazolam, clomethiazole, chlordiazepoxide, clonazepam (see also anti – epileptic drugs), diazepam, flurazepam, lorazepam, melatonin, nitrazepam, oxazepam, temazepam, zopiclone, zaleplon, zolpidem)	See page above	Withdrawal symptoms (e.g. loss of appetite and body-weight, tremor, insomnia, anxiety, perspiration, tinnitus, perceptual disturbances) may start within 1 day with short acting benzodiazepines to up to 3 weeks after stopping a long acting benzodiazepine. Some symptoms may continue for weeks or months after stopping. Withdrawal symptoms for long-term users usually resolve within 6 to 18 months of the last dose. [BNF] Drug withdrawal may take 3 months to a year or longer. [Scotland Polypharmacy Guidance 2018, CKS benzodiazepines] PrescQIPP polypharmacy benzodiazepine deprescribing algorithm PrescQIPP dependence forming medicines benzodiazepine deprescribing algorithm Melatonin - no tapering required. PrescQIPP melatonin deprescribing algorithm		

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Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Chloral hydrate	No convincing evidence of usefulness; avoid use/prolonged use. [BNF] All sedatives have an anticholinergic burden, use cautiously. See PrescQIPP anticholinergic burden bulletin for further information. Sedative hypnotic drugs may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021]	Do not withdraw abruptly. [BNF] If used daily for more than 3 to 4 weeks reduce dose by 25% every week (i.e. week 1: 75%, week 2: 50%, week 3: 25%) and this can be extended or decreased (10% dose reductions) if needed. Withdrawal symptoms (e.g. rebound insomnia, tremor, anxiety, hallucinations, seizures and delirium) usually occur 1 to 3 days after a dose change. If they are intolerable go back to the previously tolerated dose until symptoms resolve and plan for a more gradual taper with the patient. Dose reduction may need to slow down as smaller doses used (i.e. 25% of the original dose). Overall, the rate of discontinuation needs to be controlled by the person taking the medication. [Medstopper]	M	H
Dementia drugs (e.g. donepezil, galantamine, memantine, rivastigmine)	If MMSE <10, medicines may be continued if they help with behaviour. NICE recommends memantine if MMSE>10. Review benefit, use should only continue if the MMSE score is ≥10 and treatment has an effect on the global, functional or behavioural symptoms. [NICE TA217] Review benefits (slowing cognitive decline associated with Alzheimers dementia) vs. harms (gastrointestinal upset, urinary incontinence, asthma, bradycardia) particularly if person is frail, has low body weight or has limited life expectancy. [Primary Health Tasmania deprescribing guide]	Discuss tapering/withdrawal with specialist. [AWMSG Polypharmacy in older people]	M	M

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Central nervous system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Drugs used in nausea and vertigo (e.g. betahistine, prochlorperazine, metoclopramide, domperidone, hyoscine hydrobromide, cyclizine, doxylamine + pyridoxine)	Review indication and whether symptoms are ongoing (can be restarted if symptoms return). [BNF] Metoclopramide only for short term use (up to 5 days). [DSU 2013] How long has it been prescribed? Can cause extrapyramidal effects including tardive dyskinesia, risk greater in older adults with frailty. [Beers criteria 2019] Betahistine - consider reducing dose, evidence inconclusive regarding effectiveness, refer to ENT specialist if ineffective. [CKS Meniere's disease] Domperidone, maximum duration of treatment should not exceed one week. [DSU 2019] Cyclizine prone to abuse due to its euphoric and hallucinogenic effects. [SPC] Drugs for motion sickness such as hyoscine hydrobromide - should be purchased as part of self care. [NHSE/NHSCC 2018] Not appropriate for vertigo in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Prochlorperazine has some anticholinergic activity. [Scotland Polypharmacy Guidance 2018]	If taken for less than 3 to 4 weeks, no tapering needed. If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	H	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Drugs used in Parkinson's disease (e.g. amantadine, bromocriptine, co-careldopa, entacapone, orphenadrine, pramipexole, procyclidine, ropinirole, selegiline, trihexyphenidyl)	Procyclidine, trihexyphenidyl and orphenadrine are highly anticholinergic. Amantadine and bromocriptine have some anticholinergic activity. Entacapone has small potential for anticholinergic activity. Check if these medicines are being taken with other medicines that have anticholinergic activity and increase risk of cognitive impairment, e.g. TCAs, oxybutynin, chlorphenamine? [Beers criteria 2019, Scotland Polypharmacy Guidance 2018, PrescQIPP anticholinergic burden]	Avoid abrupt withdrawal in patients taking long term treatment. [BNF]	H	H
Lithium	Lithium has some anticholinergic activity, consider anticholinergic burden if other anticholinergic medicines used. [Scotland Polypharmacy Guidance 2018]	While there is no clear evidence of withdrawal or rebound psychosis with lithium, abrupt discontinuation increases the risk of relapse. If lithium is to be discontinued, the dose should be reduced gradually over a period of at least 4 weeks (preferably over a period of up to 3 months). Patients and their carers should be warned of the risk of relapse if lithium is discontinued abruptly. If lithium is stopped or is to be discontinued abruptly, consider changing therapy to an atypical antipsychotic or valproate. [BNF]	H	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antibacterials - oral (e.g. aminoglycosides, penicillins, tetracyclines, cephalosporins, carbapenems, quinolones, macrolides, minocycline)	Inappropriate uses – bacterial infection has resolved; a viral infection has been diagnosed; prophylactic treatment prescribed but no pathogen isolated (unless immunocompromised). [BNF] Minocycline should not be prescribed for acne due to safety risks and lack of evidence that it is more effective or better tolerated than other tetracyclines. [NHSE/NHSCC 2019] Treatment of asymptomatic bacteriuria (ASB) in older patients and people with diabetes has no beneficial effects. [Scotland Polypharmacy Guidance 2018, PHE 2019] Prophylactic azithromycin may be used long term to reduce the risk of COPD exacerbations where benefits outweigh risks on advice of respiratory specialist. [NICE NG115] There is a lack of evidence to evaluate the effect of preventing catheter associated-ASB with antibiotics. [Scotland Polypharmacy Guidance 2018] Is fluid intake adequate? Nitrofurantoin has potential for pulmonary toxicity, lack of efficacy in patients with CrCl <30ml/min due to inadequate drug concentration in the urine; avoid long term use. [Beers criteria 2019] See also PrescQIPP prevention, management and treatment of UTI resources	No tapering required.	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Antifungals - oral (e.g. fluconazole, itraconazole, clotrimazole, econazole, ketoconazole, tioconazole, miconazole, nystatin, griseofulvin, terbinafine)	For fungal nail infections, self care measures and topical antifungal nail paints should be tried first. Topical treatment should be purchased OTC. [BNF, CKS fungal nail infection] Skin scrapings should be taken if systemic therapy is being considered or doubt about the diagnosis. When a course of treatment of appropriate length has been finished, e.g. terbinafine orally for nail infections usually 6 weeks to 3 months (may need longer for toenail infection); oral and topical nystatin usually 7 days; do not continue indefinitely. [BNF] For finger and toe nail infections, cure is achieved in only a minority of patients, the relapse rate is high. [DTB 2008]	No tapering required.	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Anti-hyperglycaemics (e.g. acarbose, alogliptin, canagliflozin, dapagliflozin, empagliflozin, ertuglifozin, glibenclamide, gliclazide, glimepiride, glipizide, linagliptin, metformin, nateglinide, pioglitazone, repaglinide, sitagliptin, saxagliptin, tolbutamide, vildagliptin)	Do the known possible adverse drug reactions outweigh the possible benefits? Have diabetes patients taking SGLT2 inhibitors (canagliflozin, dapagliflozin, empagliflozin, ertugliflozin) been advised about the signs and symptoms of diabetic ketoacidosis (DKA) and what to do if they occur? [DSU 2016] Do any of the following apply, patient is palliative/end of life, antihyperglycaemic medicine now contraindicated, patient does not wish to take anti-hyperglycaemic after shared decision making, patient has lost significant weight and anti-hyperglycaemic no longer needed. [BNF]	No tapering needed. PrescQIPP antihyperglycaemic treatment deprescribing algorithm Check each adult with type 2 diabetes has an individualised care plan and offer lifestyle advice on alcohol intake, smoking cessation, exercise and physical activity. [CKS Diabetes - type 2]	H	H

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Endocrine system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Bisphosphonates (e.g. alendronate, risedronate, etidronate, ibandronate, zoledronic acid)	Was the patient suitable for a fracture risk assessment and was their FRAX® score in line with NICE treatment criteria? [NICE QS149] Is the patient suitable for a drug treatment break? [NOGG 2021] For a drug treatment break see PrescQIPP bulletin 231. Bisphosphonate treatment for osteoporosis Review adults for the need to continue treatment. Risk factors for osteoporotic fractures include prolonged immobility, rheumatoid arthritis, BMI <22kg/m2. [Scotland Polypharmacy Guidance 2018] Are there any risk factors suggesting continued need for treatment for up to 10 years? For example previous history of hip or vertebral fracture, age >75 years, ≥ one low trauma fracture during treatment (exclude poor adherence, e.g. <80% of treatment has been taken, and secondary osteoporosis causes), taking oral glucocorticoids ≥7.5mg prednisolone/day or equivalent, DXA scan post treatment hip BMD T-score <-2.5. [Sun 2019] Has zoledronic acid been taken for 3 years or alendronate, ibandronate or risedronate for 5 years or more? If yes, review the need for continuing treatment. [NICE QS149] Consider deprescribing: • If risk outweighs benefits. [Garfinkel 2010] • After 3 years treatment in patients with multimorbidity. [NICE NG56] • If T-score >-2.5 then reassess BMD and fracture risk after 2 years. [NICE QS149] • If treatment length >10 years, ongoing management should be considered on an individual basis with the patient. Specialist advice may need to be sought. [NOGG 2021] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Limited benefit in people with limited life expectancy. [Thompson 2019] Check 12 month course of romosuzumab finished before alendronate started. [NICE TA791]	No tapering needed. [NICE QS149] PrescQIPP bisphosphonate deprescribing algorithm Provide lifestyle advice about taking regular exercise, eating a balanced diet, stopping smoking, drinking alcohol within recommended limits [CKS Osteoporosis]	M	M

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Endocrine system

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Liothyronine	Liothyronine monotherapy is not recommended in hypothyroidism; it may be suitable for a small number of patients who have not benefitted from levothyroxine. Combination levothyroxine / liothyronine should not be used routinely in the management of hypothyroidism due to lack of clinical evidence to show that combination therapy is superior to levothyroxine monotherapy. Seek specialist advice. [RMOC 2019]	Do not stop abruptly, discuss tapering/withdrawal with specialist.	M	H
Oestrogens ± progestogens (e.g. estradiol, estriol, ethinylestradiol, tibolone)	Length of use of HRT - discuss individual benefits and risks of short term (up to 5 years) and longer-term use (e.g. VTE, CVD, type 2 diabetes, breast cancer, osteoporosis, dementia). [NICE NG23] Topical low dose oestrogen intravaginal cream is safe and effective for dyspareunia and other vaginal symptoms. [Beers criteria 2019] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] See also PrescQIPP menopause bulletin	HRT can be stopped immediately or gradually by decreasing the dose or number of days per week that HRT is taken. Gradually reducing may limit recurrence of symptoms in the short term. Gradually reducing or stopping immediately makes no difference to symptoms in the longer term. [NICE NG23] Provide information and advice on lifestyle measures for menopause symptom relief. [CKS Menopause]	M	M
Other osteoporosis medications (e.g. raloxifene, strontium, denosumab)	Limited benefit in people with limited life expectancy. [Thompson 2019]	No tapering needed.	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Drugs for urinary retention (e.g. alfuzosin, doxazosin (see also antihypertensives), tamsulosin, prazosin (see also antihypertensives), indoramin, terazosin. bethanechol)	Regular use is generally not indicated if a patient has a long-term catheter in situ. [Scotland Polypharmacy Guidance 2018] Alpha blockers may be used for at least 2 days before catheter removal to manage acute urinary retention. [BNF] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Bethanechol is a parasympathomimetic which is denoted less suitable for prescribing in the BNF. Its use has been largely superseded by catheterisation. [BNF]	Alpha blockers are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal. [Scott 2013] If used daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen (e.g. return of symptoms, chest pain, pounding heart, increased heart rate, increased blood pressure, anxiety, tremor), stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Drugs used for urinary frequency, urgency and incontinence (e.g. oxybutynin, tolterodine, darifenacin, fesoterodine, mirabegron, propiverine, solifenacin, trospium)	Review effectiveness every 4 to 6 weeks until symptoms stabilise, and then every 6 to 12 months. [BNF] Do the known possible adverse drug reactions outweigh the possible benefits? [Garfinkel 2010] e.g. postural hypotension, urinary retention, constipation. Check if continence pads are also used, is concomitant use necessary? No evidence on the use of continence pads for urinary incontinence and potential adverse effects in the long term on skin integrity. Lifestyle advice and pelvic floor muscle training should be offered. [CKS incontinence] Mirabegron contraindicated in severe uncontrolled hypertension (>180/110 mmHg). Monitor blood pressure regularly, particularly in those with pre-existing hypertension.[BNF] Stop mirabegron if blood pressure uncontrolled. Oxybutynin will decrease MMSE score in patients with dementia. [STOPP-START] Oxybutynin, tolterodine, darifenacin, fesoterodine, solifenacine and propiverine are highly anticholinergic. Check if the antimuscarinics are being taken with other medicines that have anticholinergic activity and can increase risk of cognitive impairment, e.g. chlorpromazine, TCAs, chlorphenamine. [Scotland Polypharmacy Guidance 2018] See PrescQIPP Anticholinergic burden bulletin for further information. Medicines with anticholinergic activity may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021, Seppala 2021, PrescQIPP medication and falls] Not appropriate in nursing home patients with advanced/end stage dementia due to anticholinergic burden. [Parsons 2015, CKS Dementia]	Anticholinergics are commonly associated with adverse effects if discontinued suddenly and require slow withdrawal. [Scott 2013] If taken daily for more than 3 to 4 weeks reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose. [Medstopper]	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Finasteride or dutasteride	Not indicated if patient has a long-term catheter. [Scotland Polypharmacy Guidance 2018] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] The MHRA has received reports of depression in men taking finasteride for benign prostatic hyperplasia. Patients should be advised to stop finasteride immediately and inform a healthcare professional if they develop depression. [BNF]	Discuss stopping with urology specialist. [Scotland Polypharmacy Guidance 2018]	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Cytotoxics, immunosuppressants	What outcome is expected, do the known possible adverse drug reactions outweigh the possible benefits? [Garfinkel 2010] Consider withdrawal of azathioprine for autoimmune conditions and ciclosporin for nephrotic syndrome if there is no improvement within 3 months of use. [BNF] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia]	Do not remove from current medication unless confirmed by specialist. Refer to doctor who initiated treatment if stopping is being considered by primary care team.	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Calcium + vitamin D	Does the patient have adequate levels through diet/sunlight exposure? [CKS osteoporosis] If the patient is not mobile, is a supplement still needed? [Primary Health Tasmania deprescribing guide]	No tapering needed. Provide lifestyle advice about taking regular exercise, eating a balanced diet, stopping smoking, drinking alcohol within recommended limits [CKS osteoporosis]	L	L
Lutein and antioxidant vitamins	Evidence base does not show that lutein and other eye vitamins are beneficial. If required, they should be purchased as self care. [NHSE/ NHSCC 2019]	No tapering needed. Offer advice on lifestyle interventions - stopping smoking and eating a healthy balanced diet. [CKS Macular degeneration - age related]	L	L
Sip feeds	Has screening for malnutrition been done using a validated screening tool such as the Malnutrition Universal Screening Tool (MUST)? Has a recent BMI/weight been recorded? Has a dietician recently reviewed the patient; is the patient able to prepare, or have someone else prepare fortified food and therefore does not need sip feeds? Is the patient at the end of life? Does the patient have limited mobility and is using sip feeds instead of a normal diet? Is an indication documented and does it meet ACBS criteria? Is the patient taking the sip feed as prescribed or leaving and discarding a significant amount? See PrescQIPP Oral Nutritional Supplements bulletin	No tapering needed. For advice and ideas to fortify food, see the PrescQIPP/BDA Creating a fortified diet recipe book	L	L
Sodium, potassium and iron supplements	Do the known possible adverse drug reactions outweigh the possible benefits? [Garfinkel 2010] Check if any other drug therapy is causing the depletion? No evidence of enhanced iron absorption at elemental iron doses >200mg daily [STOPP-START] or with vitamin C. See PrescQIPP Vitamins and minerals bulletin.	No tapering needed.	L	L

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Vitamins **(see also vitamin D)**	Does the patient have a disorder which requires vitamin and mineral supplements? [Garfinkel 2010, BNF] Dietary supplements/'pick me ups' should be purchased as self care. [NHSE/NHSCC 2018] Limited benefit in people with limited life expectancy. [Thompson 2019]	No tapering needed.	L	L

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Cannabis based medicinal products	Treatment with THC:CBD spray should be initiated and supervised by a physician with specialist expertise in treating spasticity due to multiple sclerosis. Treatment should only continue after a 4-week trial if the person has had at least a 20% reduction in spasticity-related symptoms on a 0 to 10 patient-reported numeric rating scale. [NICE NG144] Cannabis based medicinal products should not be used to manage chronic pain.[NICE NG144]	Refer to specialist.	H	H
DMARDs (e.g. methotrexate, sulfasalazine penicillamine, leflunomide, hydroxychloroquine)	Discontinue penicillamine if there is no improvement within 1 year. [BNF] Not appropriate in nursing home patients with advanced/end stage dementia. [Parsons 2015, CKS Dementia] Methotrexate is a weekly dose, to minimise errors, only one strength (2.5mg) should be prescribed and dispensed. [BNF]	Refer to doctor who initiated treatment. Offer advice about eating a Mediterranean diet (plenty of fruit, vegetables, fish and less meat and butter), stopping smoking, drinking alcohol. [CKS rheumatoid arthritis]	M	M
Glucosamine (including products containing chondroitin)	Not recommended by NICE for treatment of osteoarthritis (OA). Purchase OTC if required. [NHSE/NHSCC 2019, NICE CG173]	No tapering needed. Offer advice on self care management strategies for osteoarthritis, e.g. weight loss (if overweight), muscle strengthening exercises, psychological support if there is associated stress, anxiety, depression, use of analgesia. [CKS Osteoarthritis]	L	L

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
NSAIDs (e.g. ibuprofen, mefenamic acid, naproxen, diclofenac, dexibuprofen, flurbiprofen, ketoprofen, dexketoprofen, aceclofenac, etodolac, celecoxib, indometacin, meloxicam, nabumetone, piroxicam, sulindac, tenoxicam, etoricoxib, parecoxib)	Is an NSAID still needed/appropriate? For example, long term treatment of gout but no prophylaxis is prescribed [STOPP-START], chronic primary pain [NICE NG193]. Do the known possible adverse drug reactions outweigh the possible benefits? For example >3 months use for symptom relief in mild osteoarthritis, use in patients with severe hypertension/heart failure/ chronic renal failure. [STOPP-START, Garfinkel 2010] Has PPI prophylaxis been prescribed if also taking concurrent antiplatelet/ anticoagulant treatment? [STOPP-START] NSAIDs may influence the risk of falls by adversely affecting the cardiovascular or central nervous system (e.g. orthostatic hypotension, bradycardia, sedation, sleep disturbance, confusion, dizziness). [Lee 2021] If topical NSAIDs are continued indefinitely, review the need for use; short courses are generally advised for piroxicam, felbinac, diclofenac and ketoprofen. [BNF]	No tapering needed. [Medstopper] Offer advice on self care management strategies for osteoarthritis, e.g. weight loss (if overweight), muscle strengthening exercises, psychological support if there is associated stress, anxiety, depression, use of analgesia. [CKS Osteoarthritis] PrescQIPP NSAID deprescribing algorithm	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Allopurinol or febuxostat	Has patient been symptom free for many years? Have they successfully addressed modifiable risk factors, ceased or reduced diuretics? Has renal function improved? Does the patient have a normal serum uric acid level (<360micromol/L)? [CKS Gout]	Reduce dose initially and monitor symptoms. If symptoms do not reappear, consider discontinuing treatment. PrescQIPP allopurinol deprescribing algorithm Offer advice about losing weight if overweight, eating a well balanced diet, drinking alcohol sensibly, avoiding dehydration, taking regular exercise, stopping smoking. [CKS Gout]	M	M
Quinine	Not recommended for routine treatment due to potential toxicity. Should not be used unless cramps are very painful or frequent; when other treatable causes have been excluded; when non-pharmacological treatments have not worked (e.g. passive stretching exercises) and there is regular disruption to sleep. Interrupt treatment every 3 months to assess the need to continue. [BNF, Prescrire 2018]	In patients taking quinine long term, a trial discontinuation may be tried. [BNF] No tapering needed. [Medstopper] Offer advice on stretching and muscle massaging to alleviate leg cramps and stretching exercises to reduce the frequency of leg cramps. [CKS Leg cramps]	H	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Rubefacients (e.g. methylsalicylate, capsaicin)	The evidence available does not support the use of topical rubefacients in acute or chronic musculoskeletal pain. Rubefacients should not be offered to treat OA. [NHSE/NHSCC 2019] If wanted purchase OTC for self care. See PrescQIPP Rubefacients bulletin. NICE states capsaicin patches should not be used for neuropathic pain in non-specialist settings, unless advised by a specialist. [NICE CG173]	Capsaicin patches - refer to specialist who initiated treatment. Rubefacients – no tapering needed.	L	M
Skeletal muscle relaxants (e.g. baclofen, tizanidine, dantrolene, methocarbamol)	Rarely indicated long term (except for spasticity). Tizanidine is highly anticholinergic, baclofen, and methocarbamol have some anticholinergic activity. [Scotland Polypharmacy Guidance 2018] Hypotonia possible side effect. [BNF]	Baclofen is commonly associated with adverse effects if discontinued suddenly and requires slow withdrawal. [Scott 2013] If used daily for more than 3 to 4 weeks reduce dose by 25% every week (i.e. week 1: 75%, week 2: 50%, week 3: 25%) and this can be extended or decreased (10% dose reductions) if needed. If intolerable withdrawal symptoms occur (usually one to three days after a dose change, e.g. return of symptoms, muscle pain/spasm), go back to the previously tolerated dose until symptoms resolve and plan for a more gradual taper with the patient. Dose reduction may need to slow down as one gets to smaller doses (i.e. 25% of the original dose). Overall, the rate of discontinuation needs to be controlled by the person taking the medication. [Medstopper]	M	H

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Eye drops/ointments (e.g. preservative free hypromellose, polyvinyl alcohol, sodium hyaluronate, sodium chloride, chloramphenicol, ciprofloxacin, ofloxacin, fusidic acid, gentamicin, tobramycin)	Review need for preservative free eye drops - is there a valid indication for prescribing (e.g. compromised cornea, previous preservative toxicity, use of multiple eye drops, eye drops instilled multiple times per day? [Moorfields] Have antibiotic/antifungal/antiviral preparations been continued without a review or stop date? [BNF] Patients can manage mild to moderate cases of dry eye syndrome and sore tired eyes by using self care measures (e.g. good eyelid hygiene, avoidance of environmental factors) and lubricant eye drops, gels or ointments purchased OTC. [NHSE/NHSCC 2018]	No tapering needed.	M	M
Ear/nose/throat drops, sprays, solutions etc. (e.g. ciprofloxacin, ofloxacin, beclomethasone, budesonide, fluticasone, sodium cromoglicate, ephedrine, oxymetazoline, xylometazoline)	Is the medicine still required? Have antibiotic/steroid/sympathomimetic preparations been continued without review or a stop date? [BNF] Nasal sprays for the symptomatic relief of hay fever and congestion should be purchased OTC. [NHSE/NHSCC 2018]	No tapering needed.	M	M

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Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Eye drops for glaucoma (e.g. bimatoprost, latanoprost, tafluprost, travoprost, betaxolol, levobunolol, timolol, brinzolamide, dorzolamide, aproclonidine, brimonidine, pilocarpine)	Is the person having problems or difficulties with medication administration and treatment concordance? Does the person have short life expectancy? [Primary Health Tasmania deprescribing guide]	Refer to doctor/ophthalmologist who initiated treatment	M	M
Antimicrobial creams, ointments (e.g. fusidic acid, mupirocin, neomycin)	Has the condition resolved? Would continued use cause adverse effects or exacerbate the condition, e.g. preparations containing antibacterials or corticosteroids? Mupirocin, and neomycin are for short term use only. [BNF] Is the patient using sufficient emollient to minimize the use of steroids? [CKS eczema atopic]	No tapering needed.	M	M

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Corticosteroids - topical (e.g. beclometasone, betamethasone, clobetasol, clobetasone, hydrocortisone, mometasone)	Use the lowest potency needed and advise patients on the amount of product to be applied as under use can prolong treatment duration. Inform patients how long they should use a topical corticosteroid, especially on sensitive areas such as the face and genitals. For patients currently on long-term topical corticosteroid treatment, consider reducing potency or frequency of application (or both). [DSU 2021a]	Long term continuous or inappropriate use of topical corticosteroids, particularly those of moderate to high potency, can result in the development of rebound flares after stopping treatment (e.g. dermatitis with intense redness, stinging, and burning that can spread beyond the initial treatment area). Be vigilant for the signs and symptoms of topical steroid withdrawal reactions and review the position statement from the National Eczema Society and British Association of Dermatologists. Report suspected adverse drug reactions to the Yellow Card scheme, including after discontinuation of topical corticosteroids. [DSU 2021a]	H	H
Eflornithine	No evidence of eflornithines efficacy in comparison to other treatments. Stop if no benefit within four months of starting treatment. It needs to be used indefinitely but the long term benefits and safety have not been established (past 24 weeks). [CKS hirsutism]	No tapering needed.	M	M

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Lidocaine plasters	NICE CG173 on neuropathic pain does not recommend the use of lidocaine plasters as a treatment option due to limited clinical evidence supporting their use. [NHSE/NHSCC 2019]	No tapering needed.	M	H
Pain medicines - other (e.g. ketamine, local anaesthetics (topical or intravenous), corticosteroid +/- local anaesthetic trigger point injection)	NICE NG193 about chronic primary pain recommends to review the prescribing as part of shared decision making: • Explain the lack of evidence for these medicines for chronic primary pain and • Agree a shared plan for continuing safely if there is benefit at a safe dose and few harms or • Explain the risks of continuing if there is little benefit or significant harm, and encourage and support person to reduce and stop the medicine if possible. Local anaesthetics (topical or intravenous) may be continued if being used as part of a clinical trial for complex regional pain syndrome.	Refer to doctor who initiated treatment	M	H

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Dressings	Review wounds before prescribing to ensure correct dressing is chosen. Chronic wounds change/reduce in size over time – refer difficult to treat wounds to a tissue viability nurse. Address underlying problems, e.g. soiling from incontinence, wrong choice of dressing etc. Larger dressings are more expensive than the smaller sizes. Query large size dressings on repeat prescriptions. Avoid waste - prescribe the actual number of dressings needed rather than "1 x OP". Query quantities over ten units per month, most dressings can stay in place for three to five days except on infected wounds, although some patients may have multiple wound sites. [Top Tips for Prescribing Dressings 2018] Hydrocolloid dressings for low exudate wounds can be in place for five to seven days. [Wound care guidelines and dressing formulary 2020]	No tapering needed.	L	L

KEY	CR = Clincal risk level	DP = Deprescribing priority if no longer needed or indicated	H = High	M = Medium	L = Low

Drugs	Considerations to optimise medicines use after checking for a valid current indication	Withdrawing/tapering and lifestyle advice	CR	DP
Complementary therapies, herbal supplements, homeopathy	There is a limited evidence base and a lack of robust randomised controlled trials directly comparing them with standard treatments. Some are also associated with severe adverse effects; they may significantly interact with other medicines and can delay accurate diagnosis of underlying pathology. None reviewed by NICE recommend their use. [NHSE/NHSCC 2019] Limited benefit in people with limited life expectancy. [Thompson 2019]	No tapering needed.	M	M
Probiotics	Probiotics are food supplements, purchase OTC. [NHSE/NHSCC 2018] The Advisory Committee on Borderline Substances (ACBS) does not support use of probiotics for any indication. [Drug Tariff]	No tapering needed.	L	L

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